

**Testimony of
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**Before the House Committee on Energy and Commerce
Subcommittee on Oversight and Investigations
On**

**Reducing the Threat of Nuclear Terrorism: A Review of DOE's
Global Threat Reduction Initiative**

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Mr. Chairman and members of the Committee, I thank you for the invitation to testify before you on this urgent national security issue. I appear before you as the Senior Vice President for the Nuclear Threat Initiative, a charitable organization working to reduce the risk of use of nuclear, biological and chemical weapons. I should make clear, however, that the testimony I offer before you today is my own, and has not been cleared by NTI's Board of Directors.

Nuclear Terrorism – The New Nuclear Threat

The gravest threat facing the nation today is the potential for a terrorist organization to use a nuclear device in the heart of an American city – not a “dirty bomb”, but a nuclear yield producing bomb similar in effect to the one used in Hiroshima. It is this threat, the threat of a nuclear blast, not a radiological weapon, that I will focus my remarks on today because I believe that an attack using a nuclear bomb is the most serious, and the consequences the most dire for our nation, the globe, and our way of life.

The subject of this hearing – the Department of Energy's (DOE's) Global Threat Reduction Initiative (GTRI) is a critical program in our fight to prevent nuclear terrorism, by working to prevent nuclear weapons materials, and dirty bomb materials from falling into the hands of terrorists. As such, *GTRI is one of the most important national security programs that the US Government is currently undertaking.*

Terrorists have several pathways to a nuclear bomb: they can acquire, through theft or illicit purchase, a fully intact warhead from an existing nuclear weapon state, or, more likely, they will fabricate a crude nuclear device from stolen or illicitly purchased nuclear material – either plutonium or highly enriched uranium.

Getting plutonium or highly enriched uranium (HEU), the essential ingredients of a nuclear bomb, is the hardest step in making the weapon. These materials are difficult to make, and current plutonium and HEU production technologies require large, expensive

and technically sophisticated industrial facilities that are today within the exclusive domain of nation states. The most likely way a terrorist will get plutonium and HEU, therefore, is through illicit purchase or theft. Acquiring these materials is the most difficult step for terrorists to take and the easiest step for us to stop.

Unfortunately, the essential ingredients of nuclear bombs are spread around the world, much of it in poorly secured facilities. HEU is of particular concern, because the simplest design for a nuclear device – a so-called gun type design – is one that is based on using HEU as the fissile material to produce a chain reaction. There are over 40 countries that possess more than 100 research facilities that use HEU. The DOE's Global Threat Reduction Initiative is focused on minimizing, and eventually eliminating, the use of HEU in civilian applications around the world by helping to convert these facilities (or close them entirely) to ones that use low enriched uranium, a material that is not suitable for a nuclear weapon. The GTRI is also working to remove HEU from sites around the world, with an initial emphasis on HEU that came from the US and Russia.

Effectively reducing nuclear danger will require global action, through unprecedented cooperation in over 40 nations around the world—including nuclear weapons states. No state acting alone has sufficient authority, resources or influence to assuredly prevent a nuclear attack, especially from nuclear terrorism. Because our international security is only as good as the security of these materials at the least defended site, all nations must move quickly to either eliminate these dangerous materials, or improve the physical security of these materials wherever they exist.

The Gap

Governments around the globe, including the United States Government, are not yet acting with the urgency or priority of purpose required to address the nuclear threat -- the greatest threat to our security.

For example:

- Incredibly, given the threat, there is no comprehensive baseline inventory of warheads and nuclear materials that must be secured worldwide.
- Without this baseline inventory, it is not possible to develop a coordinated and prioritized plan for securing or removing those weapons/materials.
- In Russia alone, less than half of the known nuclear weapons usable materials in the country have been given some form of strengthened security through US-Russian cooperative threat reduction efforts. While the US and other states have been working with the Russian Federation to improve security over the last decade, bureaucratic disagreements over site access and liability continue to slow progress.
- While we recognize the threat that poorly secured HEU poses to our security, we are still continuing international civil commerce in this material. Despite pleas from the Director General of the International Atomic Energy Agency, Mohammed ElBaradei, there is no international agreement and not much

leadership on the subject of curtailing the widespread use of highly enriched uranium around the globe.

- Beginning in 2002, the G8 pledged at Kananaskis to match U.S. threat reduction funding for addressing weapons of mass destruction threats, but this G8 effort is making glacial progress and needs focused leadership.

GTRI a Key Program, but Strengthening Needed

The Department of Energy's Global Threat Reduction Initiative programs help to reduce, secure and eliminate highly enriched uranium, plutonium and dangerous radioactive sources on a global basis. But is GTRI doing enough, fast enough to prevent the ultimate catastrophe of nuclear terrorism from occurring? Has it been given the tools it needs to perform this most critical of missions effectively and rapidly? I believe it has not.

Below I offer some reflections on what we must achieve to prevent terrorists from being able acquire nuclear materials, and some measures of how GTRI is doing against these benchmarks.

Former Secretary Abraham deserves credit for creating this program one year ago. It is testament to his appreciation of the nuclear terrorist threat that he consolidated into a single program a number of important proliferation prevention programs within the Department of Energy in order to ensure that they were better integrated, and more effectively executed. But the program is not yet delivering the protection we need with the urgency that we need it.

Objectives & Measures of Success

Denying terrorists' access to dangerous nuclear material boils down to three essential objectives:

- 1. Establish a comprehensive global inventory of weapons and materials and a related threat assessment;**
- 2. Secure and/or eliminate vulnerable weapons and weapons materials against this inventory on an accelerated basis;**
- 3. Stop the spread of additional HEU around the globe by ending its use in civil commerce.**

How is the GTRI doing against these three objectives?

On the first point, creating a global inventory and threat assessment, DOE's Global Threat Reduction Office is working to create one. But as far as I and my colleagues at NTI have been able to discover, a risk-based global inventory does not yet exist. We recognize that creating a comprehensive, global inventory is not an easy task. It will require the integration of multiple existing databases, the creation of new data, and the

cultivation of intelligence sources to fill gaps. We do not propose that this baseline inventory, once created, should be made publicly available. But its creation will be essential for understanding how much progress the program is making, and, more importantly, for understanding whether we are securing, converting and/or eliminating the highest priority threats.

On the second point, securing and/or eliminating vulnerable weapons usable materials, the Department of Energy is clearly making progress. The Department's 2006 budget indicates a goal of converting five research reactors (out of an estimated 66 remaining) this year from HEU to non weapons-usable low enriched uranium (LEU) fuel. It estimates that it will take until 2014 to convert all 66 remaining reactors. But the metrics DOE is using may be incomplete.

We are not confident that the estimate of 66 remaining reactors includes all facilities that may have civil HEU. The DOE program to convert research reactors was not designed to address other civilian applications and facilities that use HEU, such as critical and subcritical assemblies (a type of research facility), or Russian nuclear icebreakers. There is also evidence, for example, that a significant additional number of HEU research facilities may exist within Russia, and we know that other HEU facilities of Chinese or other origin exist that have not been included in this tally. A July 2004 GAO report on DOE's reactor conversion program cites a figure of 128 facilities around the world that contain 20 kilograms or more of HEU. Moreover, can we say that we are working with the urgency needed to stem this threat if we aren't planning – even with the more modest inventory assumptions in the DOE budget – to finish the job until 2014?

A similar line of reasoning can be applied to the GTRI program element that is responsible for returning US-origin spent fuel to the US. Under the current budget plan, the US program will take spent HEU fuel back from foreign research reactors until 2019. But the material that has been declared eligible for "take-back" under the DOE program has been narrowly defined. The General Accounting Office, in a November 2004 report on the US foreign fuel return program, found that another 12,300 kilograms of HEU (enough for 200-250 nuclear weapons) that had been exported by the US was not eligible for return because the DOE, when establishing the fuel return program, limited the types of fuel that would be covered by the program. We need to broaden our definition of what the US considers eligible to bring back to the US, or send to Russia, including considering additional, third party disposition paths for some of this material.

This brings me to the third point. Surprisingly, the US continues to export HEU for use in research facilities abroad. The US is not alone in this practice, other HEU producers also continue to produce HEU for use in civil facilities. Even as we try to get our arms around the global inventory, and rightly spend money to convert facilities and eliminate HEU around the globe, the HEU "spigot" remains on. *As of yet, no global norm against the use of HEU for civilian applications exists.*

We must work to establish a global norm against use of HEU for civil purposes on an urgent basis. We must create the policy, legal and regulatory frameworks to support this

long-term vision. Within the US, we have implicitly been promoting this norm through the very nonproliferation programs that now comprise the DOE's Global Threat Reduction Initiative. But we need to move beyond an "implicit" policy of minimizing use of HEU, to an explicit one. Specifically, the US must:

- 1) Actively lead the global community in establishing a global norm that HEU in civil commerce be minimized, and eventually eliminated; and
- 2) Engage its HEU recipients in a serious dialogue about conversion on a *defined timetable*.

While US policy on minimizing HEU in civil commerce has been codified in law through the "Schumer Amendment" to the Energy Bill, (which states that the US may not transfer HEU to another state for use in research reactors unless it has provided assurances that it will convert to alternative materials for operation when technically feasible) this policy was recently dealt a serious blow by changes proposed to it in H.R. 6, the House passed Energy Policy Act of 2005. The amendment to the Schumer language in H.R. 6 would create an exemption from the conversion requirement for nuclear facilities if the costs of such conversion exceed 10 percent. The new language completely undercuts longstanding US policy to minimize HEU in civil commerce, and is moving us in the opposite direction of where we need to be globally. The US will have no standing to press the rest of the world to undertake nuclear terrorism prevention measures if it continues to hold itself, and the recipients of its HEU, to another standard.

Programmatic Tools for Success

My testimony would be incomplete without some mention of the programmatic tools that federal program managers will need to effectively execute the essential elements of the GTRI on a time urgent basis.

The rules and organizational structures of large government bureaucracies and their oversight committees unfortunately do not facilitate nimble program execution. This is not so important for handling routine matters, where the price of slow action is often only inconvenience. But where the program objective is to prevent nuclear terrorism, the price of slow action could easily be loss of life, property and freedom on an unprecedented and catastrophic scale. A nuclear terrorism event has the potential to alter life as we know it today – severely damaging the global economy, seriously eroding the public's confidence in governments, constraining the civil liberties we enjoy in the US, and devastating our sense of personal and collective security. We all have an enormous stake in ensuring that this does not happen. Accordingly, it is in our self-interest to explore innovative ways in which nuclear terrorism prevention programs, such as GTRI, can be accorded special tools to expedite action – even if this means granting unique or unprecedented authorities and execution mechanisms.

Several ideas come to mind:

- Provide critical funding flexibility by allowing GTRI program managers to move funds between program accounts as needed to act on time urgent opportunities for action. This could specifically take the form of allowing managers to move funds that exceed the reprogramming threshold allowed for other DOE programs. Another component of budget flexibility lies in the use of “uncosted balances”. Program managers should be allowed to determine the best use of these funds within the program, and not have these balances reclaimed by Congress or the Administration to offset future budget requirements.
- Congress should provide sufficiently broad legal authorities for GTRI managers to execute their mission in an expeditious manner. For example:
 - The GTRI Program should be given explicit authority to provide a broad range of incentives to reactor facility operators to convert facilities or eliminate weapons usable materials expeditiously.
 - The Program should also be given broad flexibility to accept nuclear materials for ultimate disposition in the US that is not US-origin. This will require a provision, at a minimum, to expedite the lengthy environmental reviews that are required for any materials outside of the scope of the existing (US-origin) fuel return program.

These kinds of authorities, mechanisms and processes are essential to the US Government’s ability to move with the alacrity it needs to perform the terrorism prevention mission. Unfortunately, today, we must often engage in multi-year approval and funding processes before some operations can be completed.

The above represent a few basic ideas of how we might facilitate a more streamlined and expeditious program. We should challenge ourselves to think of additional, and more creative management approaches, establishing a kind of “model-program” approach to nuclear terrorism prevention programs. We must recognize that we don’t have the luxury of time to pursue a “business as usual” approach to problem solving, and act accordingly.

Conclusion

In conclusion, I want to recognize the many men and women of our government, and other, who are working around the world on the critical mission of locking down nuclear weapons and materials. There is no more important task. The global threat of nuclear terrorism has never been higher.

But we must ask ourselves whether we have given our government servants the tools they need to get the job done with the urgency that it requires. We are in a race between cooperation and catastrophe. Whether we win that race will depend upon how smartly and expeditiously we act. At NTI, we frequently ask ourselves, our elected representatives, and our fellow citizens of the world: the day after a catastrophic instance of nuclear terror, what will we wish we had done to prevent it? Why aren’t we doing that now?